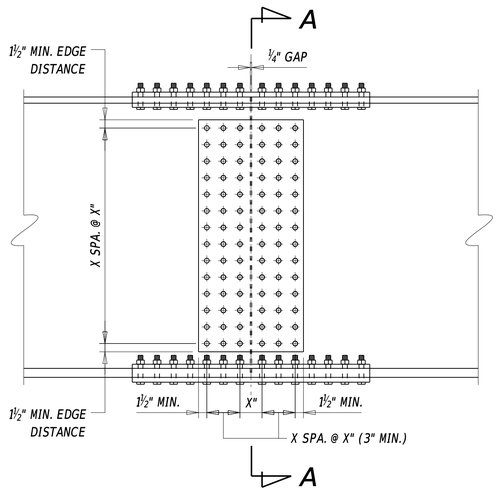
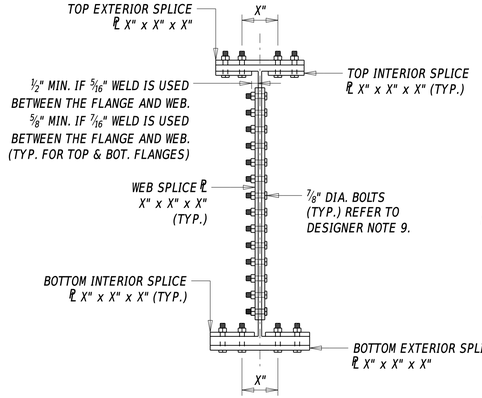
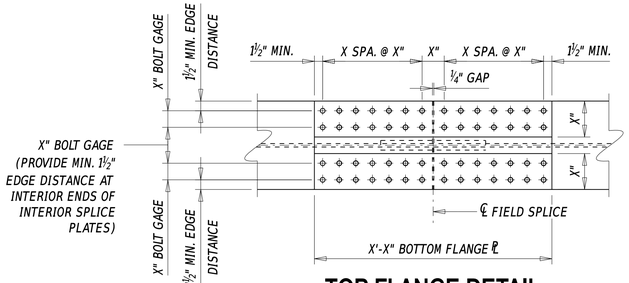


WEB SPLICE DETAIL

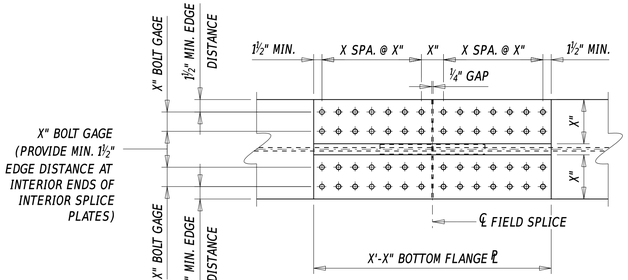
NOTE: EXAMPLE SHOWN MUST BE MODIFIED TO MEET DESIGN REQUIREMENTS. TYP. ALL FOR SPLICE DETAILS SHOWN ON THIS SHEET.



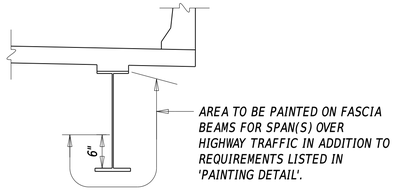
SECTION A-A



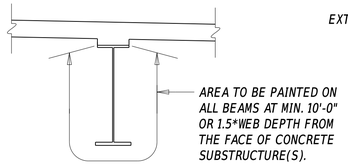
TOP FLANGE DETAIL



BOTTOM FLANGE DETAIL

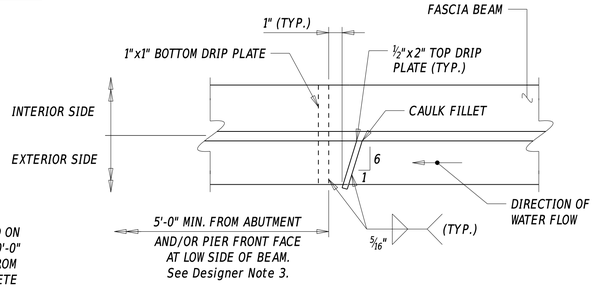


FASCIA BEAM PAINTING DETAIL



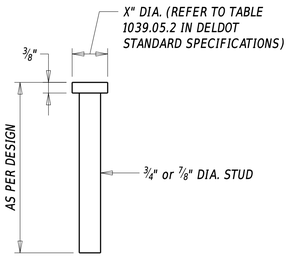
PAINTING DETAIL

NOTE: PROVIDE ABOVE DETAILS FOR WEATHERING STEEL BRIDGES.

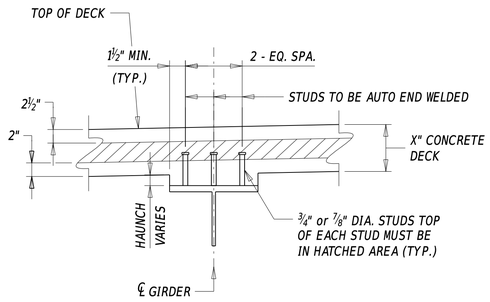


DRIP PLATE DETAIL

NOTE: PROVIDE ABOVE DETAIL FOR WEATHERED STEEL BRIDGES.

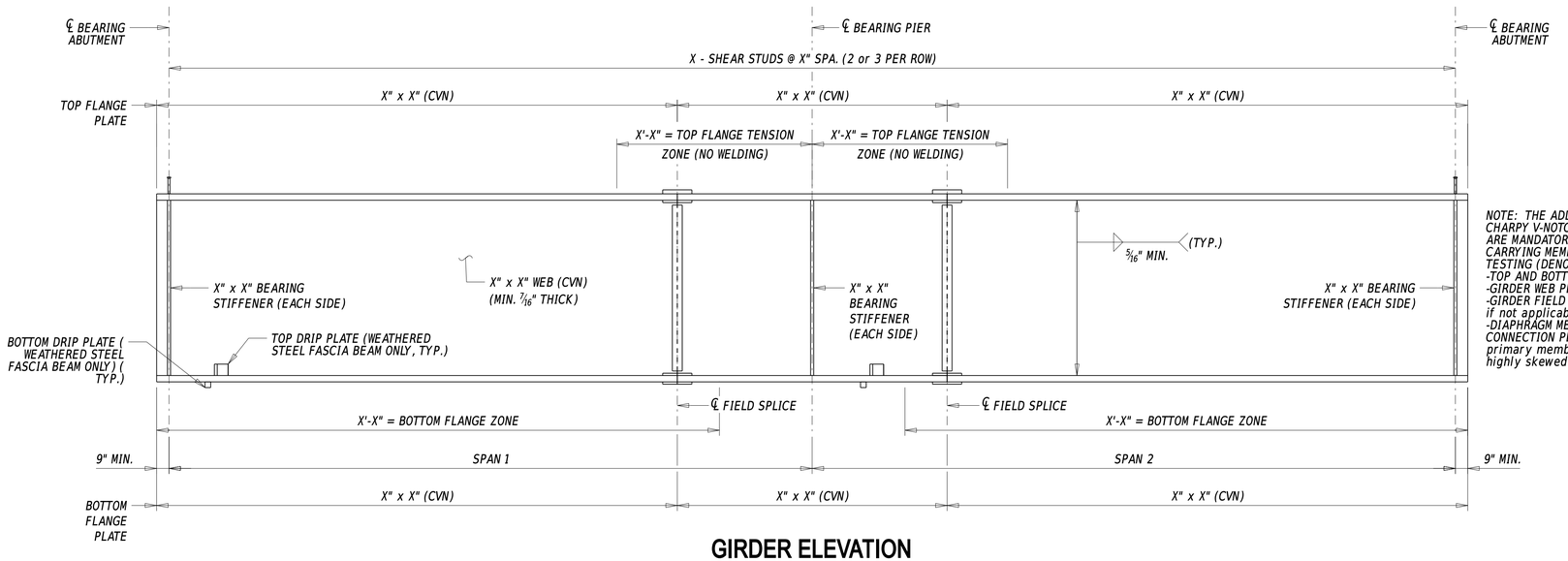


STUD DETAIL



SHEAR STUD DETAIL

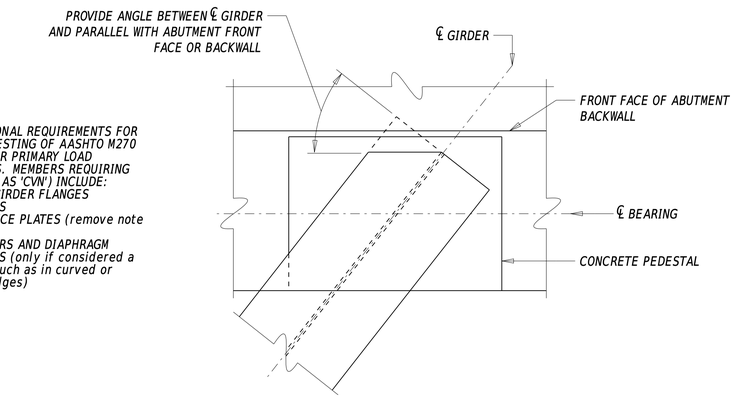
NOTE: EXAMPLE SHOWN USING 3 SHEAR STUDS PER ROW.



GIRDER ELEVATION

NOTE: CONNECTION PLATES AND POTENTIAL JACKING STIFFENERS NOT SHOWN FOR CLARITY. 'CVN' DENOTES CHARPY V-NOTCH TESTING.

NOTE: THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270 ARE MANDATORY FOR PRIMARY LOAD CARRYING MEMBERS. MEMBERS REQUIRING TESTING (DENOTED AS 'CVN') INCLUDE:
-TOP AND BOTTOM GIRDER FLANGES
-GIRDER WEB PLATES
-GIRDER FIELD SPLICE PLATES (remove note if not applicable)
-DIAPHRAGM MEMBERS AND DIAPHRAGM CONNECTION PLATES (only if considered a primary member such as in curved or highly skewed bridges)



GIRDER FLANGE CLIP DETAIL

NOTE: PROVIDE SIMILAR ABOVE DETAIL AS REQUIRED FOR SKEWED BRIDGES. SOLE PLATE AND BEARING NOT SHOWN FOR CLARITY.

DELDOT BRIDGE DESIGN SECTION

DELAWARE DEPARTMENT OF TRANSPORTATION
BRIDGE DESIGN MANUAL

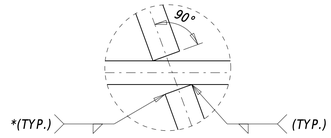
STEEL BEAM BRIDGE DETAILS

NOT TO SCALE

ISSUE DATE	
10/01/2015	01/31/2019
10/01/2016	04/01/2021
10/01/2017	

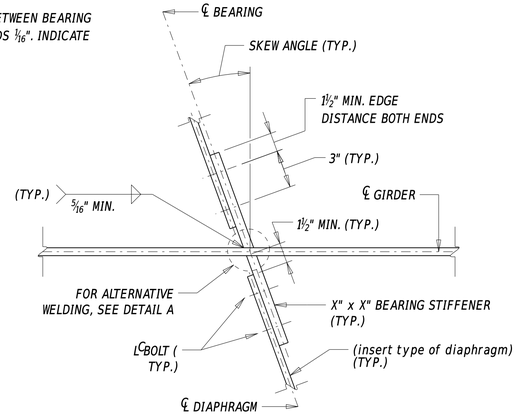
DETAIL No. 335.01

SHEET No. 1 of 3



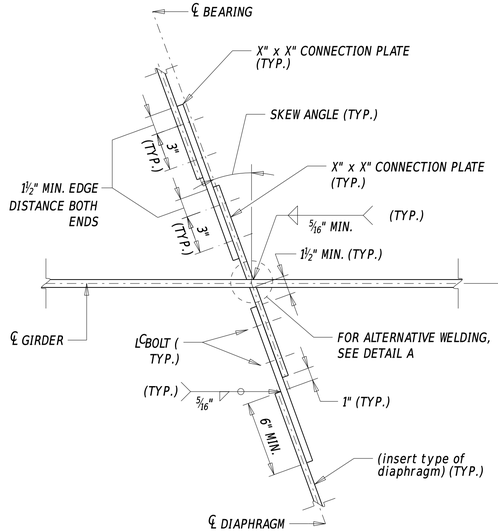
DETAIL A

** NOTE: WELD SIZE MUST BE INCREASED BY AMOUNT OF GAP BETWEEN BEARING STIFFENER OR CONNECTION PLATE AND WEB WHEN GAP EXCEEDS 1/16". INDICATE SIZE ON SHOP DRAWINGS.*



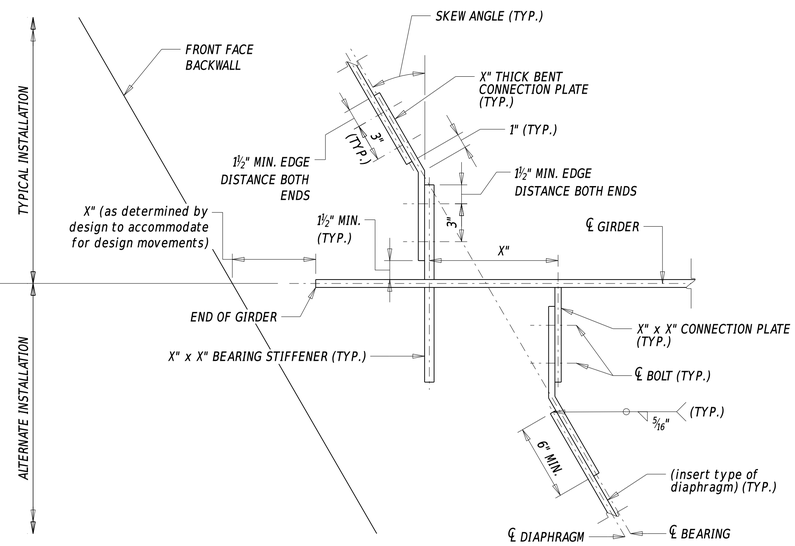
CONNECTION PLATE DETAIL FOR SKEWS UP TO 20° (OPTION 1)

NOTE: EXAMPLE SHOWN USING BEARING STIFFENERS. TYPICAL FOR K-SHAPED INTERMEDIATE DIAPHRAGMS AND END/INTERMEDIATE DIAPHRAGMS UTILIZING MC CHANNELS OR W-BEAMS.



CONNECTION PLATE DETAIL FOR SKEWS UP TO 20° (OPTION 2)

NOTE: THE WELDING IN 'ALTERNATE INSTALLATION' MUST BE DONE BY THE FABRICATOR. EXAMPLE SHOWN USING CONNECTION PLATES. TYPICAL FOR INTERMEDIATE CROSS FRAME DIAPHRAGMS AND END DIAPHRAGMS UTILIZING W-BEAMS.

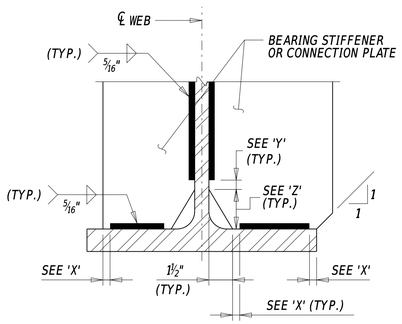


CONNECTION PLATE DETAIL FOR SKEWS GREATER THAN 20° (END & PIER ONLY)

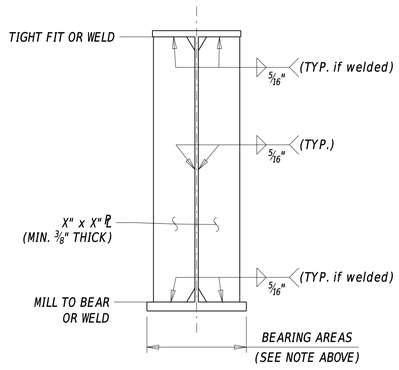
NOTE: THE WELDING IN 'ALTERNATE INSTALLATION' MUST BE DONE BY THE FABRICATOR.

Deleted Note

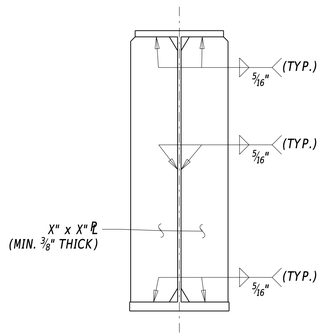
NOTE:
X = ¼" +/- ⅛"
Y = ½" +/- ¼"
Z = FOLLOWING:
-2½" FOR ½" WEB
-3" FOR 9/16" WEB
-4" FOR ¾" WEB



WELD TERMINATION AND CORNER CHAMFER DETAIL

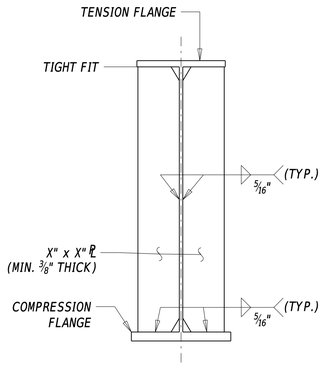


BEARING STIFFENER DETAIL



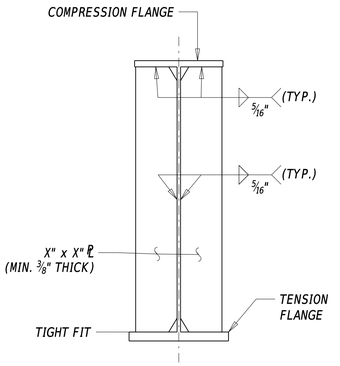
CONNECTION PLATE DETAIL FOR INTERMEDIATE DIAPHRAGMS

NOTE: CONNECTION PLATES NOT NEEDED ON EXTERIOR SIDE OF THE FASCIA GIRDER/BEAM.



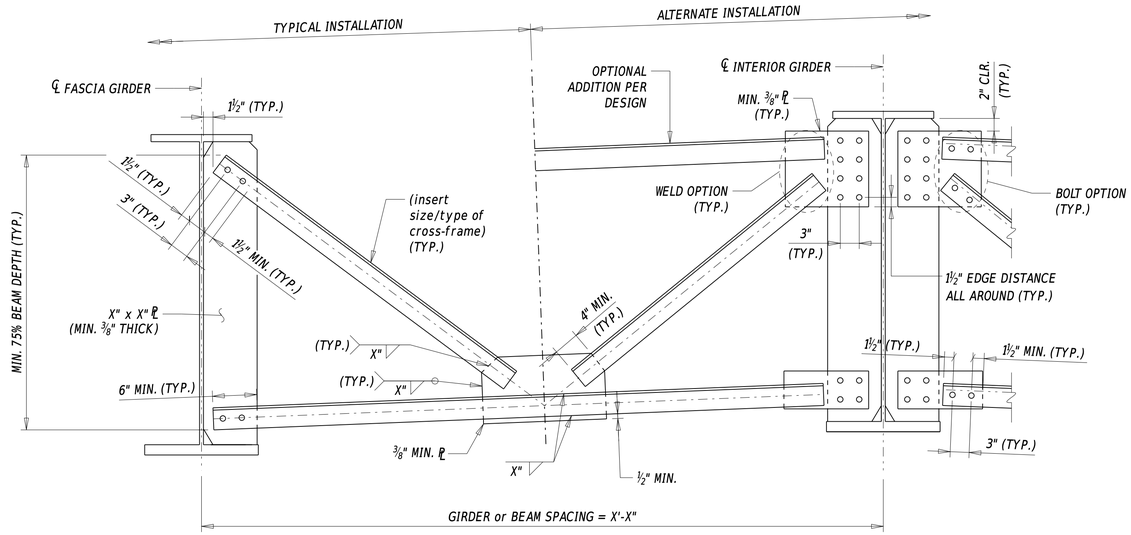
INTERMEDIATE STIFFENER DETAIL

NEGATIVE MOMENT REGION



INTERMEDIATE STIFFENER DETAIL

POSITIVE MOMENT REGION

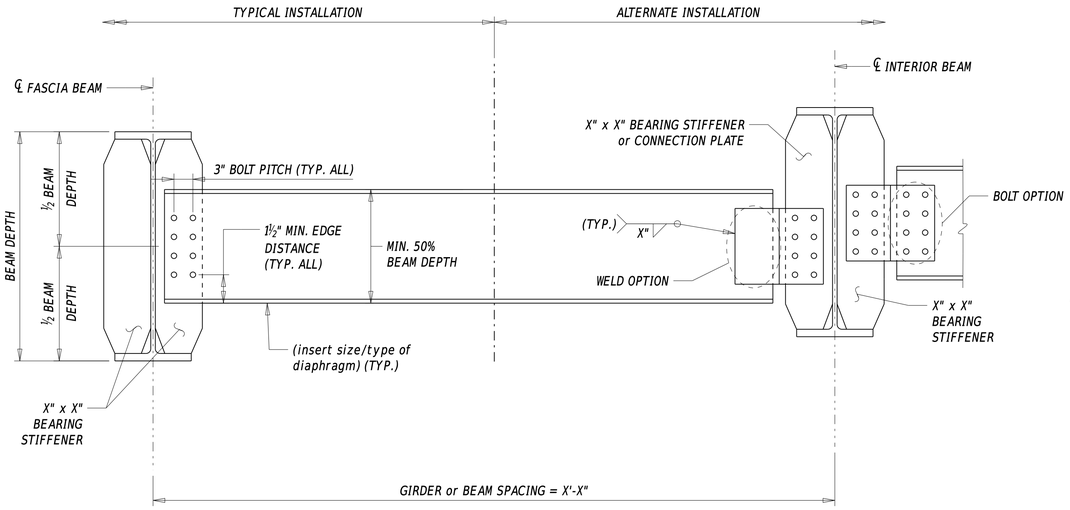


INTERMEDIATE CROSS-FRAME DETAIL

NOTE: EXAMPLE SHOWN USING L-SHAPE CROSS-FRAMES. WT-SHAPES OPTIONAL FOR CURVED GIRDERS.

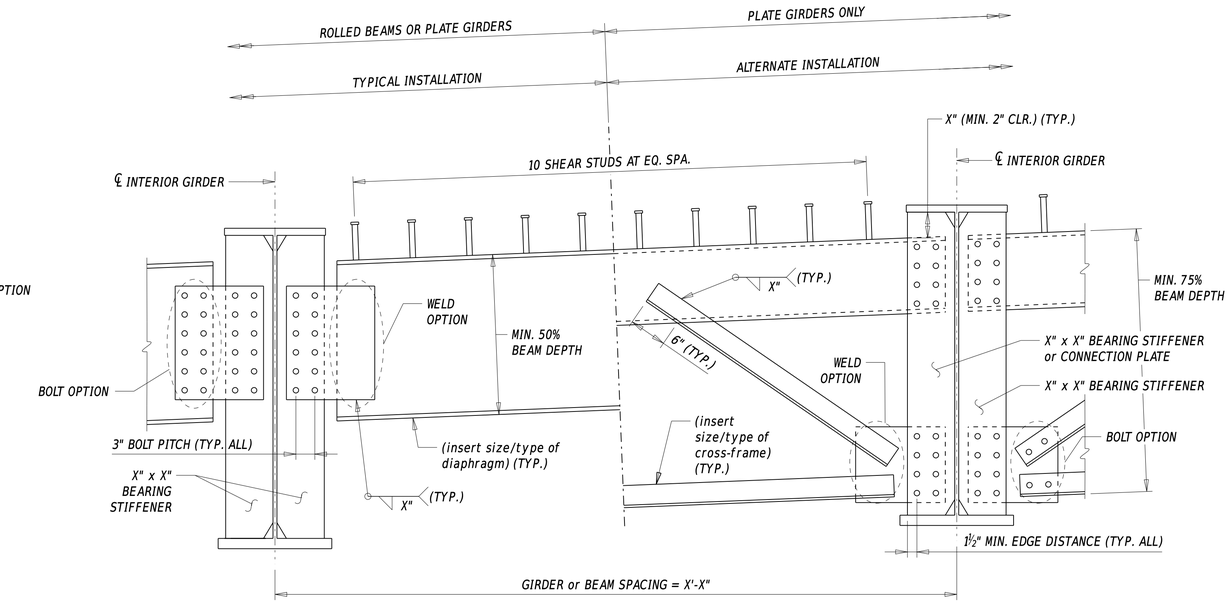
DESIGNER NOTES

1. REFER TO SECTION 106.8 FOR FURTHER INFORMATION ON STEEL SUPERSTRUCTURE DESIGN CONSIDERATIONS.
2. ADDITIONAL GUIDANCE ON DETAILING OF STEEL SUPERSTRUCTURES CAN BE FOUND IN PUBLICATION 'AASHTO/NSBA STEEL BRIDGE COLLABORATION G 1.2 - 2003 -DESIGN DRAWING PRESENTATION GUIDELINES'.
3. AT 'DRIP PLATE DETAIL', THE DESIGNER SHOULD CONSIDER INCREASING THE DISTANCE GREATER THAN THE SPECIFIED 5'-0" MINIMUM FOR TALL ABUTMENTS OR PIERS TO LIMIT THE POTENTIAL FOR WIND-BLOWN WATER TO SPLASH ON THE CONCRETE SURFACES.
4. IF USE OF HIGHER PERFORMANCE STEELS (GRADES HPS 70W OR HPS 100W) ARE NEEDED, SPECIFICALLY CALL OUT WHICH STEEL PLATES WITHIN THE BEAM ARE TO BE MADE OF MATERIALS OTHER THAN GRADE 50W. REFER TO SECTION 106.8.1.3 FOR MORE INFORMATION.
5. MODIFIED DIAPHRAGMS OR CROSS-FRAMES TO SUPPORT UTILITY INFRASTRUCTURE NOT SHOWN IN THESE DETAILS. IF SUCH SUPPORTS ARE NEEDED, THE DETAILS MUST BE SHOWN ON PLANS.
6. IT IS PREFERRED TO NOT INCLUDE JACKING STIFFENERS IN END DIAPHRAGMS (IF MC-SHAPE OR W-BEAM DIAPHRAGMS ARE USED) FOR FUTURE JACKING DUE TO UNCERTAINTY OF EXACT PLACEMENT OF FUTURE JACKING. SUCH JACKING STIFFENERS SHOULD BE ADDED IN THE FIELD BY THE CONTRACTOR TO PERFORM JACKING OPERATIONS AT A LATER DATE. HOWEVER IF THE ALTERNATE END CROSS-FRAME AS SHOWN IN 'END DIAPHRAGM or END CROSS FRAME DETAILS' IS USED, THE DESIGNER SHOULD ADD FUTURE JACKING STIFFENERS AS APPROPRIATE IN THE MAIN BEAM/GIRDERS AND INCLUDE SUCH DETAILS ON PLANS.
7. DETAILS SPECIFICALLY FOR CURVED GIRDERS, TRUSS STRUCTURES, GUSSET PLATES, LONGITUDINAL STIFFENERS, AND LATERAL BRACING NOT INCLUDED IN DETAIL 335.01.
8. ADDITIONAL PROJECT SPECIFIC STEEL NOTES MAY BE NEEDED IF NOT COVERED IN SECTION 615 OF THE STANDARD SPECIFICATIONS OR DETAIL NO. 301.01 - BRIDGE PROJECT NOTES.
9. REFER TO SECTION 106.8.6 FOR MORE INFORMATION ON ALLOWABLE ALTERNATIVES TO HIGH STRENGTH ⅞" DIA. BOLTS.



INTERMEDIATE DIAPHRAGM DETAILS FOR ROLLED BEAMS

NOTE: EXAMPLE SHOWN USING MC-SHAPE DIAPHRAGMS. W-BEAM OPTIONAL TO SERVE AS A DIAPHRAGM IF ROLLED BEAM DEPTH GREATER THAN 36 INCHES DEEP.



END DIAPHRAGM or END CROSS-FRAME DETAILS

NOTE: EXAMPLE SHOWN USING W-BEAM DIAPHRAGMS AT 'TYPICAL INSTALLATION' AND L-SHAPE AND C-CHANNEL AT 'ALTERNATE INSTALLATION. 'TYPICAL INSTALLATION' IS THE PREFERRED METHOD FOR PURPOSE OF FUTURE JACKING. IN THIS CASE, USE OF MC-CHANNEL OR W-BEAM ARE PREFERRED FOR END DIAPHRAGMS. HOWEVER IF ACCOMMODATIONS FOR FUTURE JACKING CAN BE ACHIEVED UNDER THE GIRDER, THE 'ALTERNATE INSTALLATION' MAY BE CONSIDERED. See Designer Note 6.